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GMO Feed Trials End With Safe Results

Report Categories:

Biotechnology

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Report Highlights:

Poland recently published scientific work about the safety of transgenic crops in the feed chain, following feed trials that were conducted by the Polish Academy of Sciences, National Research Institute of Animal Production. The research is positive and indicates that Polish and other consumers should have confidence in the food safety of their meat, poultry, and egg production where GMOs are consistently used with good results.

General Information:

Poland recently published scientific work about the safety of transgenic crops in the feed chain, following feed trials that were conducted by the Polish Academy of Sciences, National Research Institute of Animal Production. The research is positive and indicates that Polish and other consumers should have confidence in the food safety of their meat, poultry, and egg production where GMOs are consistently used with good results. Other research on potatoes and flax indicated that transgenic

technology caused no noticeable differences in use and in the case of flax, transgenic technology provided a benefit in the resulting oil. This report provides the English excerpts of the studies which resulted from feed trials and examinations by panels of scientists performing unbiased, new research that repeated results found elsewhere – the technology is no different from conventional varieties. The reports and articles consistently explain that there were no observable differences between the crops. This is Polish science, conducted in Poland, with conclusions published in the local language. The report was also prepared with official English summaries those texts are repeated below verbatim. The report is available from the National Research Institute of Animal Production.

Title: Genetically modified (GM) feeds and conventional feeds in animal nutrition.

Published by: National Research Institute of Animal Production in Balice, Poland

Head of Research committee: Professor Franciszek Brzoska

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<http://www2.izoo.krakow.pl/english/>

Page 46

Subtitle: Safety of modified (GMO) plants and feedstuffs in animal nutrition and procedures, employed in scientific studies.

“Confirmation of GMO safety, enabling its commercialization requires many studies the schematic run of which includes stage of identification and then, its characteristics. Procedure of nutritional evaluation covers two basic stages: comparison of chemical composition of plants from transgenic lines and non-transgenic parental lines (identifying a potential risk) and evaluation of nutritive and dietetic value (characterizing a potential risk). The safety of transgenic protein and other metabolites in modified GM plant, toxicity and allergenic of transgenic product and of other components of edible part of the plant are examined in vitro and according to the EFSA recommendations. The in vitro studies are concluded with the utilization of animal model, on laboratory animals but feed GM plants and their safety in nutrition chain are also evaluated in farm animals.

Numerous studies on chemical composition of the crops, registered in the European Union, revealing the expression of proteins Cry, Pat, EPSPS, being resistant to insects and/or tolerating herbicides of maize, soy, cotton and rape have confirmed the equivalency of the content and nutritive value of GM plants and feeds in relation to their non-transgenic equivalents. Many experiments have confirmed equivalency of nutritive value of feed transgenic GM1 plants or lack of negative effect of feeding the feedstuffs of the second generation on productivity of animals. Any negative effect on GMO on animal-origin products has not been found. Any unintended consequences of the influence of transgenic of the plants intended for feed were not recorded; the expected production effect corresponded to the obtained one. Transgenic and non-transgenic varieties of feed plants were considered as comparable. It was found that componential equivalency corresponded with the nutritive value of feeds produced from transgenic and non-transgenic crops. The possibility of utilizing GM2 plants in nutrition, positively affecting the productivity of animals was experimentally confirmed.

The so-far conducted studies do not confirm the possibility of transferring the modified fragments of vegetal DNA to the consumer's organism. Also, the risk of horizontal transfer of genes from the

transgenic plant, being found in the diet, to the organisms, living in the alimentary tract is minimal. Induction of antibiotic-resistance of microorganisms of the alimentary tract via expression of transferred marker genes and transfer to genes, causing disturbances in microflora functions is recognized as being highly improbable.

The marketed GM products should be monitored; on the ground of information on functioning and the consequences of GMO presence on the market, further decisions concerning its utilization shall be undertaken”.

Page 82

Subtitle: The results of GMO feed monitoring in Poland.

“GMO products used in Poland for feeding purposes are subject to government supervision according to EC requirements”. NOTE: This study shows that GMO testing and monitoring in Poland is effective.

Page 84

Subtitle: Results of feed analysis for determination of GMO carried out by the National Veterinary Research Institute in Pulawy.

“Based on the results of our investigation it can be stated that feed used for animal feeding in Poland is produced by using genetically modified soybeans of Roundup Ready variety. The main reason for this is that GM soybeans are commonly used in the local feed market and are cheaper than unmodified soya. The low percentage of GM positive samples in maize samples proves that maize used in animal feeding was grown in Poland or in some European countries”.

Page 90

Subtitle: Effect of the addition of transgenic potatoes with overexpression of glucose transferase on selected parameters of rat reproduction.

“No effect of the GMO-containing diet on indicators of growth and development of rats in parental generation and reproduction parameters was found. No deaths were recorded among experimental animals. Potatoes with overexpression of glucose transferase are a safe dietary component”.

Page 94

Subtitle: The effect of genetically modified components on fattening results and meat quality in pigs.

“The results obtained in the experiment indicate no negative effects of genetically modified maize grain (Bt) and soybean meal (Roundup Ready) on weight gains, feed utilization and meat quality of fattened pigs”.

Page 96

Subtitle: Equivalence of flax components with overexpression of flavonoid synthesis enzymes and non-transgenic plant grain.

“The grain of modified flax with the increased content of flavonoids and favorable composition of fatty

acids may constitute a valuable element of a diet with health-promoting effects. Transgenesis improved the technological properties of oil”.

Page 99

Subtitle: Genetically modified feeds authorized in the European Union and their effect on animal health.

“In the EFSA report the quoted authors claimed that the differences in mass of the internal organs were not significant. The authors report that no significant differences were noted between the experimental group fed Bt176 and the control group. The experiments carried out on dairy cows were aimed at examining, apart from health condition, animals’ body mass, the quality parameters of milk and the number of somatic cells. No significant differences were observed in relation to the GMO-free control group”.

Page 104

Subtitle: Egg performance and egg quality in laying hens and production indices in broiler chickens fed diets containing genetically modified components.

“The results found in the study indicated that diets containing genetically modified corn and soybean meal did not affect egg performance and egg quality in laying hens and production indices in broiler chickens”.

Two studies bear further scrutiny, one on page 172, indicates that no transgenic DNA survived more than 8 hours of ruminant activity for dairy cattle, indicating that the roundup ready soybean DNA did remain 2 hours longer than conventional, but disappeared completely long before the end of rumination. Another, on page 356 compared transgenic and conventional soybeans for their fatty acids, but did not present a methodology. Fatty acids in soybeans vary widely and varieties should be compared that only express differences in the transgenic components.

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Pasze zmodyfikowane genetycznie (GMO) i pasze tradycyjne w żywieniu zwierząt

*Genetically modified (GM) feeds and
conventional feeds in animal nutrition*



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